

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A network connection system comprising:

a client-~~apparatus;~~ machine;

an authentication ~~server;~~ server machine; and

a connection ~~server;~~ server machine; wherein:

the authentication server machine includes:

a retention unit ~~for storing~~ configured to store second connection authentication information generated by the connection server machine based on user identification information and ~~storing to store~~ an association between the second connection authentication information and a connection server address of the connection ~~server;~~ server machine;

a first unit ~~for acquiring;~~ configured to acquire, from the client ~~apparatus;~~ machine, second connection authentication information that is generated by the client ~~apparatus-~~ machine based on user identification information input into the client ~~apparatus-~~ machine and ~~acquiring to acquire~~ a client address of the client ~~apparatus-~~ when machine once the first unit receives a connection request from the client ~~apparatus;~~ machine; and

a second unit ~~for transmitting~~ configured to transmit the client address to the connection server address associated with the second connection authentication information acquired by the first unit ~~and transmitting and to transmit~~ the connection server address to the client ~~apparatus;~~ machine, the authentication server machine transmitting the connection server address to the client machine in an authentication process before having

ever received the connection server address from the client machine in the same authentication process;

the client ~~apparatus-machine~~ includes:

a third unit ~~for transmitting~~ configured to transmit in a message the second connection authentication information generated by the client ~~apparatus-machine~~ to the authentication server machine together with the connection ~~request;~~ request, the message not containing the address of the connection server machine;

a fourth unit ~~for receiving~~ configured to receive the connection server address from the authentication ~~server;~~ server machine; and

a fifth unit ~~for preparing~~ configured to prepare first connection authentication information based on the user identification information input into the client ~~apparatus-machine~~ and ~~transmitting, to transmit independent of the authentication server,~~ the first connection authentication information to the connection server address of the connection ~~server;~~ server machine;

the connection server machine includes:

a sixth unit ~~for allowing~~ configured to allow the first connection authentication information to be received from the client ~~apparatus-machine,~~ the client address being received from the authentication ~~server;~~ server machine; and

a seventh unit ~~for performing~~ configured to perform itself an authentication process by using the first connection authentication information transmitted from the client address, and

the authentication ~~server;~~ server machine, in response to receiving the second connection authentication information from the client ~~apparatus-machine,~~ searches the retention unit for the second connection authentication information to determine the connection server address associated with the second connection authentication information.

2. (Original) The network connection system according to claim 1, wherein the second connection authentication information is a message digest of the first connection authentication information.

3. (Currently Amended) An authentication server ~~machine-for-being~~ connected to a plurality of client ~~apparatuses-machines~~ and a plurality of connection servers, server machines, the authentication server machine comprising:

a retention unit ~~for storing~~ configured to store second connection authentication information generated based on user identification information and ~~storing to~~ store an association between each second connection authentication information and a connection server address of a corresponding connection ~~server~~; server machine;

a first unit ~~for acquiring~~ configured to acquire the second connection authentication information from a client ~~apparatus-machine~~ and a client address ~~when once~~ the first unit receives a connection request from the client ~~apparatus~~; machine; and

a second unit ~~for transmitting~~ configured to transmit the acquired client address to the connection server address of the connection server machine associated with the acquired second connection authentication information, and ~~transmitting, to transmit,~~ independent of the connection ~~server~~; server machine, the connection server address to the client ~~apparatus-machine~~ which has transmitted the connection request, wherein

the authentication ~~server~~; server machine, in response to receiving the second connection authentication information from the client ~~apparatus~~; machine, searches the retention unit for the second connection authentication information to determine the connection server address associated with the second connection authentication ~~information~~. information, and

the authentication server machine transmits the connection server address to the client machine in an authentication process before having ever received the connection server address from the client machine in the same authentication process.

4. (Canceled)

5. (Currently Amended) A connection server machine operating with an authentication server machine and a client ~~apparatus,~~ machine, the connection server machine comprising:

a control unit ~~for receiving~~ configured to receive a client address of the client ~~apparatus~~ machine from the authentication server machine after the authentication server machine authenticates information received from the client address and ~~switching to switch~~ from a state in which authentication information is not allowed to be received from the client address, ~~independent of the authentication server, address~~ to a state in which authentication information is allowed to be received from the client ~~address, independent of the authentication server, address~~, the switching occurring in response to the receiving of the client address; and

an authentication unit ~~for receiving~~ configured to receive the authentication information from the client ~~apparatus~~ machine having the client address to perform itself an authentication process by using the authentication information.

6. (Currently Amended) A network connection system comprising:

a client ~~apparatus;~~ machine;

an authentication ~~server;~~ server machine; and

a connection ~~server;~~ server machine, wherein:

the authentication server machine includes:

a retention unit ~~for storing~~ configured to store a first encrypted user name and a first encrypted password, which are encrypted by a first encryption method, and

~~storing to store~~ an association between a connection server address of the connection server ~~machine~~ and the first encrypted user name and the first encrypted password;

a first unit ~~for acquiring~~ configured to acquire the first encrypted user name and the first encrypted password and a client address ~~when once~~ the first unit receives a connection request from the client ~~apparatus, machine,~~ the first encrypted user name and the first encrypted password being an identification information for identifying a user of the client ~~apparatus, machine~~ and

a second unit ~~for transmitting~~ configured to transmit the acquired client address to the connection server address associated with the user identification information, ~~receiving to receive~~ from the connection server ~~machine~~ information indicating that the connection server ~~machine~~ has shifted to a connection wait state, and ~~transmitting, to~~ transmit, independent of the connection ~~server, server machine,~~ the connection server address to the client ~~apparatus, machine,~~ the authentication server machine transmitting the connection server address to the client machine in an authentication process before having ever received the connection server address from the client machine in the same authentication process;

the client ~~apparatus machine~~ includes:

a third unit ~~for transmitting~~ configured to transmit to the authentication server ~~machine in a message~~ the first encrypted user name and the first encrypted password, which are encrypted by the first encryption method, together with the connection ~~request; and~~ request, the message not containing the address of the connection server machine;

a fourth unit ~~for receiving~~ configured to receive the connection server address from the authentication ~~server, server machine,~~ and ~~transmitting, independent of the authentication server, to transmit~~ to the connection server address a second encrypted user

name and a second encrypted password, which are generated by encrypting using a second encryption method a user name and a password input by the user, and

the authentication ~~server,~~ server machine, in response to receiving the first encrypted user name and the first encrypted password from the client ~~apparatus,~~ machine, searches the retention unit for the first encrypted user name and the first encrypted password to determine the connection server address associated with the first encrypted user name and the first encrypted password.

7. (Currently Amended) An authentication server machine operating with a plurality of client ~~apparatuses,~~ machines and a plurality of connection ~~servers,~~ server machines, the authentication server machine comprising:

a retention unit ~~for storing~~ configured to store user names and passwords, which are encrypted by a predetermined method, and ~~for storing~~ to store associations between both of each user name and each password and a connection server address of a corresponding connection ~~server,~~ server machine;

a first unit ~~for acquiring~~ configured to acquire an acquired encrypted user name, an acquired encrypted password, and an acquired client address ~~when once~~ the first unit receives a connection request from the client ~~apparatus,~~ machine, the encrypted user name and password being an identification information of a user of the client ~~apparatus;~~ machine; and

a second unit ~~for transmitting~~ configured to transmit the acquired client address to the connection server address associated with the acquired encrypted user name and password, ~~receiving to receive~~ from the connection server machine information indicating that the connection server machine has shifted from a state in which authentication information is not allowed to be received from the client ~~address,~~ independent of the authentication server, address to a state in which authentication information is allowed to be

received from the client ~~address, independent of the authentication server, address,~~ and ~~transmitting, to transmit,~~ independent of the connection ~~server, server machine,~~ the connection server address to the client ~~apparatus, machine,~~ which has issued the connection request, wherein

the authentication ~~server, server machine,~~ in response to receiving the identification information of a user of the client ~~apparatus machine~~ from the client ~~apparatus, machine,~~ searches the retention unit for the identification information of a user of the client ~~apparatus machine~~ to determine the connection server address associated with the identification information of a user of the client ~~apparatus, machine, and~~

the authentication server machine transmits the connection server address to the client machine in an authentication process before having ever received the connection server address from the client machine in a same authentication process.

8. (Canceled)

9. (Currently Amended) A client ~~apparatus machine~~ operating with an authentication server ~~machine~~ and a connection ~~server, server machine,~~ the client ~~apparatus machine~~ comprising:

a connection request unit ~~for transmitting~~ configured to transmit to the authentication server ~~machine in a message~~ a connection request and a user name and a password which are encrypted by a first encryption ~~method;~~ method, the message not containing an address of the connection server machine;

a receiving and transmitting unit ~~for receiving,~~ configured to receive, independent of the connection ~~server, server machine, a connection~~ the connection server address from the authentication ~~server, server machine,~~ encrypting to encrypt by a second encryption method the user name and the password input by a user, and ~~transmitting to~~ transmit the encrypted user name and password to the connection server ~~machine~~ address;

a retention unit ~~for storing~~ configured to store local authentication information, which is previously supplied from the connection ~~server,~~ server machine, the local authentication information associating unique information of the client ~~apparatus-machine~~ with at least one of a user name and a password previously provided to the connection ~~server;~~ server machine; and

a local authentication unit ~~for generating~~ configured to generate the unique information upon receiving a user name and a password input by the user, and ~~authenticating~~ to authenticate the user name and the password input by the user by judging based on the local authentication information whether or not at least one of the user name and the password input by the user is associated with the unique information, wherein:

the connection request unit transmits to the authentication server machine the connection request and the user name and the password which are encrypted by the first method only ~~when~~ if the user name and the password input by the user are authenticated by the local authentication unit.

10. (Currently Amended) A connection server machine operating with a client ~~apparatus-machine~~ and an authentication ~~server,~~ server machine, the connection server machine comprising:

a control unit ~~that receives~~ configured to receive from the authentication server machine an address of the client ~~apparatus-machine~~ and ~~switches,~~ to switch, in response to the receiving of the address, from a state in which authentication information is not allowed to be received from the client ~~address,~~ independent of the authentication server, address to a state in which authentication information is allowed to be received from the client ~~address,~~ independent of the authentication server, address, and ~~allows to allow~~ communication from the address of the client ~~apparatus-machine~~ for a predetermined period; and

a transmitting unit ~~that transmits~~ configured to transmit to the authentication server machine information indicating that the connection server machine has shifted to a connection wait state in which the connection server machine allows communication from the address of the client ~~apparatus~~ machine for the predetermined period.

11. (Currently Amended) A network connection system comprising:

a client ~~apparatus~~; machine;

an authentication server machine for supplying information guiding a connection destination to the client ~~apparatus~~; machine; and

a connection ~~server~~; server machine, wherein the client ~~apparatus~~; machine is configured to:

~~calculates~~ calculate first authentication information unique to the client ~~apparatus~~ machine to register the first authentication information in the connection ~~server~~; server machine, ~~acquires~~ acquire local authentication information from the connection ~~server~~; server machine, the local authentication information associating the first authentication information with a predetermined authentication information and second authentication information with the predetermined authentication information, and ~~stores~~ store the local authentication information;

~~receives~~ receive second authentication information input by a user when the user instructs a connection request with respect to the connection ~~server~~; server machine, again ~~calculates~~ calculate the first authentication information unique to the client ~~apparatus~~; machine, ~~authenticates~~ authenticate the second authentication information and the again calculated first authentication information based on the stored local authentication information, and if authentication is successful, ~~encrypts~~ encrypt the second authentication information by a first encryption method and ~~transmits~~ transmit the encrypted second authentication information to the authentication ~~server~~; server machine; and

~~receives, receive,~~ independent of the connection ~~server, server~~
~~machine,~~ from the authentication ~~server-server machine,~~ a connection server address of the
connection ~~server,server machine,~~ ~~transmits~~ transmit to the connection server address the
second authentication information encrypted by a second encryption method and ~~starts~~ start
communication with the connection ~~server-server machine.~~

12. (Currently Amended) A connection method using a network connection
system including a client apparatus, an authentication server, and a connection server, the
method comprising:

storing in the authentication server second connection authentication
information generated by the connection server based on first connection authentication
information;

associating the second connection authentication information with a
connection server address of the connection server;

transmitting in a message by the client apparatus to the authentication server a
second connection authentication information generated by the client apparatus as user
identification information together with a connection ~~request;~~ request, the message not
containing an address of the connection server;

acquiring a client address and the user identifying information from the client
apparatus ~~when~~ once the authentication server receives the connection request from the client
apparatus;

transmitting the client address to the connection server address of the
connection server ~~when~~ once the user identification information is authenticated based on the
second connection authentication information;

transmitting, by the authentication server, the connection server address to the
client ~~apparatus;~~ apparatus, the authentication server transmitting the connection server

address to the client apparatus in an authentication process before having ever received the connection server address from the client apparatus in the same authentication process;

receiving by the client apparatus, independent of the connection server, the connection server address from the authentication server;

transmitting by the client apparatus a first connection authentication information to the connection server address;

receiving by the connection server the first connection authentication information from the client address; and

performing an authentication process by using the first connection authentication information transmitted from the client address.

13. (Currently Amended) A connection method using a network connection system including a client apparatus, an authentication server, and a connection server, the method comprising:

storing by the authentication server a user name and a password which are encrypted by a first encryption method;

storing in a retention unit in the authentication server an association between both the encrypted user name and the encrypted password and a connection server address of the connection server;

transmitting in a message by the client apparatus to the authentication server a connection request and the user name and the password which are encrypted by the first encryption ~~method;~~ method, the message not containing an address of the connection server;

receiving by the authentication server the connection request from the client apparatus;

acquiring a client address of the client apparatus and the user name and the password, which are encrypted by the first encryption method, as information identifying a user of the client apparatus;

searching, by the authentication server, in response to receiving the information identifying the user of the client apparatus from the client apparatus, the retention unit for the information identifying the user of the client apparatus to determine the connection server address associated with the information identifying the user of the client apparatus;

transmitting, by the the authentication server, the connection server address to the client apparatus in an authentication process before having ever received the connection server address from the client apparatus in the same authentication process;

transmitting the client address to the connection server address;

receiving by the connection server the client address;

switching, by the connection server, from a state in which authentication information is not allowed to be received from the client-address, ~~independent of the authentication server,~~ address to a state in which authentication information is allowed to be received from the client-address, ~~independent of the authentication server,~~ address, the switching occurring in response to the receiving of the client address;

transmitting to the authentication server information indicating that the connection server has shifted to a connection wait state in which the connection server allows communication from the address of the client apparatus for a predetermined period;

encrypting using a second encryption method a user name and a password input by a user;

~~transmitting, independent of the authentication server,~~ transmitting to the connection server address the user name and the password which are encrypted by the second encryption method; and

performing, by the connection server, an authentication process by using the user name and the password which are encrypted by the second encryption method and are received by the connection server from the client apparatus.

14. (Currently Amended) The network connection system according to claim 1, wherein the sixth unit of the connection server machine allows the first connection authentication information to be received from the client address for a limited time period.

15. (Currently Amended) The connection server machine according to claim 5, wherein after a limited time period has elapsed since the control unit performs the switching, the control unit switches back from the state in which authentication information is allowed to be received from the client ~~address, independent of the authentication server,~~ address to the state in which authentication information is not allowed to be received from the client ~~address, independent of the authentication server.~~ address.

16. (Previously Presented) The connection method according to claim 12, further comprising:

allowing the connection server to receive the first connection authentication information from the client address for a limited time period.

17. (Currently Amended) The connection method according to claim 13, further comprising:

after a limited time period has elapsed since the connection server performs the switching, switching back from the state in which authentication information is allowed to be received from the client ~~address, independent of the authentication server,~~ address to the

state in which authentication information is not allowed to be received from the client address, independent of the authentication server address.

18. (Currently Amended) A computer readable storage medium storing a program causing a computer of a client apparatus to execute an access processing to a network system including an authentication server and a connection server, wherein,

the authentication server includes (i) a first unit that acquires, from the connection server, an address of the connection server and user identification information encrypted by the connection server with a first encryption method and (ii) a first retention unit that stores the address of the connection server and the encrypted user identification information which are acquired by the first unit,

the connection server includes a second retention unit that stores unique information which is unique to the client apparatus and the user identification information,

the client apparatus includes a third retention unit that stores an address of the authentication server, first information and second information, wherein the first information is generated by the connection server by encrypting predetermined information with the unique information as a key and the second information is generated by the connection server by encrypting predetermined information with the user identification information as a key,

the access processing comprising:

requesting a user to enter user identification information,

receiving user identification information from the user,

generating unique information which is unique to the client apparatus in response to receiving the user identification information,

decrypting the first information stored in the third retention unit by using the generated unique information as a key,

decrypting the second information stored in the third retention unit by using the received user identification information as a key,

judging whether the decrypted first and second information are correct,

encrypting the received user identification information with the first encryption method ~~when~~ if the decrypted first and second information is correct, and correct,

transmitting in a message, to the authentication server, an access request and the received user identification information encrypted with the first encryption ~~method~~.

method, the message not containing the address of the connection server, and

receiving from the authentication server the address of the connection server

before having ever transmitted the connection server address to the authentication server in

the same access processing.